

Europäisches Patentamt
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PCT patent application in the name of TFL Ledertechnik GmbH

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Patents

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Ladies and Gentlemen

Applicant acknowledges receipt of the Written Opinion dated 21 January 2004, which is based on the result of the International Search Report (ISR) mailed on 6 October 2003.

In the ISR are cited 3 references indicated to anticipate subject matter claimed in the instant application.

US-A-4,791,214 and US-A-3,560,543

Claims 19-34 are cancelled and a correspondingly amended page 39 is enclosed to this letter. Pages 40 to 43 are to be deleted. Both patents describe agents to increase adhesion of plastics. This use is quite different from the instantly claimed treatment of a selected leathers and inventive step in view of these two publications is believed to be creditable.

EP-A-0 316 730

This document discloses a composition comprising an aliphatic amine or imine with a protonated secondary amine group (salt of an amine) and salts of sulfonic acid groups containing dyes. The composition is used to dye chromium or vegetable tanned leather. Example 7 describes dyeing of whet blue leather (chromium tanned), which is re-tanned with a Naphthalinesulfonic

acid/formaldehyde condensate and a vegetable tanning agent. The dyed leather is then treated with an aqueous solution of tetraethylene pentamine salts, which is reacted with adipic acid and formic acid.

The instantly claimed process differs in treating a dialdehyde pre-tanned and with organic tanning agents re-tanned leather (wet white) and in using a polyamine or a silane modified polyamine rather than a salt thereof. These two differences provide novelty of the claimed process.

The disclosure in EP-A-0 316 730 on page 3, lines 11-15 teaches clearly away from the instant process, since polyamine salts are suggested and a skilled person would not use pure amines for selected leathers to achieve superior results as shown in comparative example 15b1 and 15b1 with vegetable tanned leathers. Inventive step is believed creditable in view of the teaching of EP-A-0 316 730.

Issuance of a detailed substantive examination is respectfully requested on the basis of the amendment and the observations.

With kind regards
For Applicant



Dr. Hans-Jochen Dannappel
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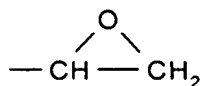
Enclosure: Amended page 39

15. Process according to Claim 14, characterized in that the functional silane corresponds to the formula VI,



in which

R_{13} is C_1 - C_4 alkyl and in particular methyl, R_{14} is $-(CH_2)_3-O-CH_2-$ and X_1 is an epoxide group of the formula



or R_{14} is C_2 - C_6 alkylene and X_1 is $-NCO$ or $-C(O)OR_{15}$, in which R_{15} is hydrogen or C_1 - C_4 alkyl.

16. Process according to Claim 15, characterized in that the amount of functional alkylsilanes in the composition with the polyamine is preferably from 1 to 60% by weight, based on the total amount of polyamine and functional alkylsilane.

17. Process according to Claim 1, characterized in that the polyamine or the mixture or reaction product of polyamine and alkylsilane is used in an amount of from 0.1 to 30% by weight, based on the shaved weight of the fibrous material.

18. Process according to Claim 1, which is carried out at from room temperature to $60^\circ C$.

~~19. Composition comprising (a) at least one low molecular weight, oligomeric or polymeric polyamine having at least 3 amino groups and (b) at least one alkylsilane having organic oxy radicals bonded to the silicon atom and a functional group bonded to the alkyl group, said functional group being capable of forming a covalently bonded bridging group with an amino group of the polyamine.~~

20. Composition according to Claim 19, characterized in that the amount of functional alkylsilanes in the composition is from 1 to 60% by weight, based on the total amount of polyamine and functional alkylsilane.

21. Reaction product obtainable by reacting (1) at least one organic polyamine which has at least three amino groups in the molecule with (2) at least one alkylsilane having organic oxy radicals bonded to the silicon atom and a functional group bonded to the alkyl group, so that